

CLAIMS

1. A tile lighting system, comprising:
a plurality of addressable lighting units disposed in a grid;
5 a controller for controlling the illumination from the addressable lighting units;
and
a light diffusing cover for covering the grid.
2. A system of claim 1, wherein the light diffusing cover includes a phosphorescent
10 material.
3. A system of claim 1, wherein the light diffusing cover is substantially translucent.
4. A system of claim 1, wherein the light diffusing cover is provided with a
15 geometric shape.
5. A system of claim 1, wherein the light diffusing cover is provided with an
irregular pattern.
- 20 6. A system of claim 1, wherein the lighting system is configured to be disposed in
proximity to similar lighting systems in a tile arrangement.
7. A lighting system of claim 1, wherein the lighting units are controlled using a
string light protocol.
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8. A system of claim 1, further comprising an authoring system for authoring effects
on the tile lighting system.
9. A system of claim 1 wherein the lighting system is capable of coordinating
30 effects with another similar lighting system.

10. A system of claim 1, wherein the system is disposed in an architectural environment.

5 11. A system of claim 1, wherein the system is disposed on a building exterior.

12. A tile light, comprising:

a plurality of LED lighting units disposed on a circuit board in an array, wherein the LED lighting units respond to control signals to produce mixed light of varying

10 colors; and

a diffuser for receiving light from the lighting units.

13. A tile light of claim 12, wherein the diffuser includes a phosphorescent material.

15 14. A tile light of claim 12, wherein the diffuser is substantially translucent.

15. A tile light of claim 12, wherein the diffuser is provided with a geometric shape.

16. A tile light of claim 12, wherein the diffuser is provided with an irregular pattern.

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17. A tile light of claim 12, further comprising an authoring facility for authoring effects for the lighting system.

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18. A tile light of claim 17, wherein the authoring facility is an object-oriented authoring facility.

19. A tile light of claim 17, wherein an effect displayed on the tile light corresponds to a graphical representation of the authoring facility.

30 20. A tile light of claim 17, wherein an effect displayed on the tile light corresponds to an incoming video signal.

21. A tile light of claim 12, wherein the tile light is disposed in an architectural environment.
- 5 22. A tile light of claim 12, wherein the tile light is disposed on a building exterior.
23. A tile light, comprising
a plurality of linear LED lighting units disposed about the perimeter of a substantially rectangular housing; and
10 a diffuser for diffusing light from the lighting units.
24. A tile light of claim 23, wherein the diffuser includes a phosphorescent material.
25. A tile light of claim 23, wherein the diffuser is substantially translucent.
- 15 26. A tile light of claim 23, wherein the diffuser is provided with a geometric shape.
27. A tile light of claim 23, wherein the diffuser is provided with an irregular pattern.
- 20 28. A tile light of claim 23, further comprising a reflector interior to the housing for providing a consistent level of light output to different portions of the diffuser.
29. A tile light of claim 23, wherein the housing is divided into a plurality of cells.
- 25 30. A tile light of claim 23, wherein the cells are rectangular.
31. A tile light of claim 23, wherein the cells are triangular.
32. A tile light of claim 23, further comprising an authoring system for authoring
30 effects for the lighting system.

33. A tile light of claim 32, wherein the authoring system is an object-oriented authoring facility.

34. A tile light of claim 32, wherein an effect displayed on the tile light corresponds
5 to a graphical representation of the authoring facility.

35. A tile light of claim 23, wherein the tile light is disposed in an architectural environment.

10 36. A tile light of claim 23, wherein the tile light is disposed on a building exterior.

37. A lighting system, comprising:
a series of LED-based lighting units, wherein each lighting unit is configured to
respond to data addressed to it in a serial addressing protocol, wherein the series of
15 lighting units is configured in a flexible string; and
a fastening facility for holding the flexible string in a predetermined
configuration.

38. A lighting system of claim 37, wherein the fastening facility is a substantially
20 linear channel for holding the flexible string.

39. A lighting system of claim 37, wherein the fastening facility holds the flexible
string in an array.

25 40. A lighting system of claim 37, further comprising an authoring system for
authoring effects for the lighting system.

41. A lighting system of claim 40, wherein the authoring system is an object-oriented
authoring facility.

42. A lighting system of claim 41, wherein an effect displayed on the array corresponds to a graphical representation of the authoring facility.

43. A lighting system of claim 39, wherein an effect displayed on the array
5 corresponds to an incoming video signal.

44. A lighting system of claim 39, wherein the array is disposed in an architectural environment.

10 45. A lighting system of claim 39, wherein the array is disposed on a building exterior.

47. A modular component for a lighting system, comprising:
a series of LED-based lighting units disposed in an array on a circuit board,
15 wherein each lighting unit is configured to respond to data addressed to it in a serial addressing protocol.

48. A component of claim 47, further comprising an authoring system for authoring effects for the lighting system.

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49. A component of claim 48, wherein the authoring system is an object-oriented authoring facility.

50. A component of claim 48, wherein an effect displayed on the component
25 corresponds to a graphical representation of the authoring facility.

51. A component of claim 48, wherein an effect displayed on the component corresponds to an incoming video signal.

30 52. A component of claim 47, wherein the circuit board is a flexible circuit board.

53. A component of claim 47, wherein the circuit board is a printed circuit board.

54. A component of claim 47, wherein the component is disposed in an architectural environment.

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55. A component of claim 47, wherein the array is disposed on a building exterior.

56. A lighting system, comprising:

a plurality of modular components, wherein each modular component includes a
10 series of LED-based lighting units disposed in an array on a circuit board, wherein each
lighting unit is configured to respond to data addressed to it in a serial addressing
protocol.

57. A system of claim 56, wherein the modular components are disposed adjacent to
15 each other to form a large array of modular components.

58. A system of claim 56, further comprising an authoring system for authoring
effects for the lighting system.

20 59. A system of claim 58, wherein the authoring system is an object-oriented
authoring facility.

60. A system of claim 58, wherein an effect displayed on the large array corresponds
to a graphical representation of the authoring facility.

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61. A system of claim 58, wherein an effect displayed on the array corresponds to an
incoming video signal.

62. A system of claim 58, wherein the array is disposed in an architectural
30 environment.

63. A system of claim 58, wherein the array is disposed on a building exterior.
64. A method of providing a tile lighting system, comprising:
providing a plurality of addressable lighting units disposed in a grid;
5 providing a controller for controlling the illumination from the addressable
lighting units; and
covering the grid with a light diffusing cover.
65. A method of claim 64, wherein the light diffusing cover includes a
10 phosphorescent material.
66. A method of claim 64, wherein the light diffusing cover is substantially
translucent.
- 15 67. A method of claim 64, wherein the light diffusing cover is provided with a
geometric shape.
68. A method of claim 64, wherein the light diffusing cover is provided with an
irregular pattern.
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69. A method of claim 64, wherein the lighting system is configured to be disposed
in proximity to similar lighting systems in a tile arrangement.
70. A method of claim 64, wherein the lighting units are controlled using a string
25 light protocol.
71. A method of claim 64, further comprising providing an authoring system for
authoring effects on the tile lighting system.
- 30 72. A method of claim 64 wherein the lighting system is capable of coordinating
effects with another similar lighting system.

73. A method of claim 64, wherein the system is disposed in an architectural environment.

5 74. A method of claim 64, wherein the system is disposed on a building exterior.

75. A method of providing a tile light, comprising:
providing a plurality of LED lighting units disposed on a circuit board in an array, wherein the LED lighting units respond to control signals to produce mixed light
10 of varying colors; and
providing a diffuser for receiving light from the lighting units.

76. A method of claim 75, wherein the diffuser includes a phosphorescent material.

15 77. A method of claim 75, wherein the diffuser is substantially translucent.

78. A method of claim 75, wherein the diffuser is provided with a geometric shape.

79. A method of claim 75, wherein the diffuser is provided with an irregular pattern.
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80. A method of claim 75, further comprising an authoring facility for authoring effects for the lighting system.

81. A method of claim 80, wherein the authoring facility is an object-oriented
25 authoring facility.

82. A method of claim 80, wherein an effect displayed on the tile light corresponds to a graphical representation of the authoring facility.

30 83. A method of claim 80, wherein an effect displayed on the tile light corresponds to an incoming video signal.

84. A method of claim 75, wherein the tile light is disposed in an architectural environment.

5 85. A method of claim 75, wherein the tile light is disposed on a building exterior.

86. A method of providing a tile light, comprising
providing a plurality of linear LED lighting units disposed about the perimeter of
a substantially rectangular housing; and

10 providing a diffuser for diffusing light from the lighting units.

87. A method of claim 86, wherein the diffuser includes a phosphorescent material.

88. A method of claim 86, wherein the diffuser is substantially translucent.

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89. A method of claim 86, wherein the diffuser is provided with a geometric shape.

90. A method of claim 86, wherein the diffuser is provided with an irregular pattern.

20 91. A method of claim 86, further comprising a reflector interior to the housing for
providing a consistent level of light output to different portions of the diffuser.

92. A method of claim 86, wherein the housing is divided into a plurality of cells.

25 93. A method of claim 86, wherein the cells are rectangular.

94. A method of claim 86, wherein the cells are triangular.

30 95. A method of claim 86, further comprising an authoring system for authoring
effects for the lighting system.

96. A method of claim 95, wherein the authoring system is an object-oriented authoring facility.

97. A method of claim 95, wherein an effect displayed on the tile light corresponds to
5 a graphical representation of the authoring facility.

98. A method of claim 86, wherein the tile light is disposed in an architectural environment.

10 99. A method of claim 86, wherein the tile light is disposed on a building exterior.

100. A method of providing lighting, comprising:
providing a series of LED-based lighting units, wherein each lighting unit is
configured respond to data addressed to it in a serial addressing protocol, wherein the
15 series of lighting units is configured in a flexible string; and
providing a fastening facility for holding the flexible string in a predetermined
configuration.

101. A lighting method of claim 100, wherein the fastening facility is a substantially
20 linear channel for holding the flexible string.

102. A lighting method of claim 100, wherein the fastening facility holds the flexible
string in an array.

25 103. A lighting method of claim 100, further comprising an authoring system for
authoring effects for the lighting system.

104. A lighting method of claim 103, wherein the authoring system is an object-
oriented authoring facility.

105. A lighting method of claim 104, wherein an effect displayed on the array corresponds to a graphical representation of the authoring facility.

106. A lighting method of claim 103, wherein an effect displayed on the array
5 corresponds to an incoming video signal.

107. A lighting method of claim 103, wherein the array is disposed in an architectural environment.

108. A lighting method of claim 103, wherein the array is disposed on a building
10 exterior.

109. A method of providing a modular component for a lighting system, comprising:
providing a series of LED-based lighting units disposed in an array on a circuit
15 board, wherein each lighting unit is configured respond to data addressed to it in a serial
addressing protocol.

110. A method of claim 109, further comprising an authoring system for authoring
effects for the lighting system.

20 111. A method of claim 110, wherein the authoring system is an object-oriented
authoring facility.

112. A method of claim 110, wherein an effect displayed on the component
25 corresponds to a graphical representation of the authoring facility.

113. A method of claim 110, wherein an effect displayed on the component
corresponds to an incoming video signal.

30 114. A method of claim 109, wherein the circuit board is a flexible circuit board.

115. A method of claim 109, wherein the circuit board is a printed circuit board.

116. A method of claim 109, wherein the component is disposed in an architectural environment.

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117. A method of claim 109, wherein the array is disposed on a building exterior.

118. A method of providing a lighting system, comprising:

providing a plurality of modular components, wherein each modular component
10 includes a series of LED-based lighting units disposed in an array on a circuit board,
wherein each lighting unit is configured respond to data addressed to it in a serial
addressing protocol.

119. A method of claim 118, wherein the modular components are disposed adjacent
15 to each other to form a large array of modular components.

120. A method of claim 118, further comprising an authoring system for authoring
effects for the lighting system.

20 121. A method of claim 120, wherein the authoring system is an object-oriented
authoring facility.

122. A method of claim 120, wherein an effect displayed on the large array
corresponds to a graphical representation of the authoring facility.

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123. A method of claim 120, wherein an effect displayed on the array corresponds to
an incoming video signal.

30 124. A method of claim 120, wherein the array is disposed in an architectural
environment.

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125. A method of claim 118, wherein the array is disposed on a building exterior.